



U.S. Department  
Of Transportation

**Federal Highway  
Administration**

# Memorandum

6300 Georgetown Pike  
McLean, Virginia 22101

Subject: **ACTION:** LTPP Directive TDP-32  
Release of LTPP Traffic Analysis Software Version 1.3

Date: June 26, 2003

From: Debbie Walker *Debbie Walker*  
Long Term Pavement Performance Team

Reply to  
Attn of: HRDI-13

To: Dr. Frank Meyer, PM - LTPP North Atlantic Regional Contract  
Dr. Frank Meyer, PM - LTPP North Central Regional Contract  
Mr. Mark Gardner, PM - LTPP Southern Regional Contract  
Mr. Kevin Senn, PM - LTPP Western Regional Contract

Attached is the Long Term Pavement Performance (LTPP) Program Directive TDP-32. This directive addresses the executable and supporting table updates made to the LTPP Traffic Software. An instruction for installation of the software is included in Attachment 1. Please ensure that all personnel involved with the Traffic Program are aware of this new directive.

Should you have any questions or would like to discuss this directive, please do not hesitate to contact me at 202-493-3068.

Attachments (2)

# LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE



*For the Technical Direction of the LTPP Program*



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<b>Program Area:</b>	Traffic	<b>Directive Number:</b>	TDP-32
<b>Date:</b>	June 26, 2003	<b>Supersedes:</b>	TDP-28
<b>Subject:</b>	<i>Release of LTPP Traffic Analysis Software Version 1.3</i>		

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## Purpose

This directive discusses the executable and supporting table updates made to the LTPP Traffic Analysis Software.

## Changes

This release addresses software functionality, Software Performance Reports (SPRs), and database modifications as follows:

- ◆ Software Functionality (Analysis.exe):
  - Weight daily loading performance improved by using Oracle's SQL\*Loader utility (See Daily Weight Loading)
  - Changed "IMS Processing" to "Compute IMS Data" on main menu for clarity
  - Added to TRAFFIC\_CODES: 84, TRF\_ORA\_ERROR, 'Duplicate Record (purged)', 84, FLAG\_ERROR\_TYPE, '{' for manual purge of duplicate records.
  - Added Annual Summary Processing
  - Added QC of Annual Tables
  - Added Report for QC of Annual Tables
  - Updated SHRP Information Screen and Processing. Update only updates current record. Add New inserts a new record. Added a Next and Prior button to scroll through the records. Added a Delete button to delete a SHRP\_INFO record. Added a report button to display all the SHRP\_INFO records for a site.
  - Added processing to QC administration tables. SHRP\_INFO, TRAFFIC\_ANALYSIS\_TRACKER, and Sheet 7 (TRAFFIC\_CLASS\_CONVERT\_MASTER and TRAFFIC\_CLASS\_CONVERT\_DATA).

**Changes** (*continued*)

- ◆ Software Functionality (Analysis.exe):
  - Added a button to Database (DB) Administration Screen to create QC report from DB Administration.
  - Removed “Factor Information” and “Base Line Tables” from Database Administration Screen. “Factor Information” does not have any data and does not require software support. “Base Line Tables” will be maintained through the “SPS” option on the main screen.
  - Added Site Equipment Information Screen and Processing.
  - Added new ESALs, Multi-Year, Years by Month Graph (Option for Average over Trucks not available).
- ◆ SPRs Addressed:
  - *WRSC 427*. Insert into err\_cl fails, ORA-00001 Unique constraint violated. Daily class error processing modified.
  - *SPR 3258*. FILEFINDER is incorrectly producing the error files not in LTPPFILETRACKER when the list of SHRP\_IDs in SHRP\_INFO does not match the SHRP\_IDS.
  - *SPR 3259*. This SPR is likely related to the failure of FILEFINDER with incomplete directory structures. The data sets available included 0500, 0600, 0700, and 0900. The software processed 0500 (cls), 0600 (cls), and 0700 (cls and wt) then stopped. There was no wt data for the 0500 and 0600 sites. There was no failure to clear TEMP tables noted. The SHRP\_INFO list includes other SPS projects. The data sets provided for the File Finder test will be designed to go through the ALL case for daily summaries as well.
- ◆ Database Modifications:
  - Modified TEMP tables to have NOLOGGING for performance

**Daily Weight Loading**

For loading daily weight data, the following will occur:

- ◆ The 7W\* files will be read
- ◆ Error records will go into the ERR\_WT tables via ERR\_WT\_TEMP
- ◆ Valid records will be written to a vehicle file and an axle file rather than being inserted directly into the database. The files will be named VEHSTSHRPYYYY\_temp.ctl and AXLESTSHRPYYYY\_temp.ctl where ST = State Code, SHRP = SHRP ID and YYYY = year. These files will be:
  - located in the drive location specified in the Data Location Box.
  - opened with mode of Create, so if a file should be left over, it will be truncated to 0 length and repopulated.

**Daily Weight Loading** *(continued)*

Once all of the 7W\* files have been read and it is determined that Daily Processing should continue, the following will occur:

- ◆ The TRAFFIC user will create working tables.
  - The working tables will be VEH\_STSHRPYYYY and AXLE\_STSHRPYYYY. The structure of these tables is the same as VEHICLE\_TEMP and AXLE\_TEMP.
  - The working tables are created with NOLOGGING. NOLOGGING does not provide any recovery, so if the loading process crashes the data will be lost. If the software or system crashes currently during a load the site should be reloaded as it may be in an invalid state.
- ◆ Using the ORACLE utility SQL\*Loader, the \*.ctl files populate the working tables with and option of DIRECT=TRUE, which is a faster method of loading data then individual inserts.
  - During the load, a DOS Window will appear twice — once for the vehicle data and once for the axle data — and be removed when the SQL\*Loader is completed. These windows should be ignored.
- ◆ After population, the needed indexes for these tables are created.
- ◆ The new working tables are used to populate the Daily tables.
- ◆ Once the Daily tables are populated the working tables are dropped, other temporary tables are cleaned up, and the \*.ctl, \*.log, and \*.bad files are removed from the drive.

The loading results will be the same, but hopefully there will be a noticeable performance improvement. The VEHICLE\_TEMP and AXLE\_TEMP tables will no longer be used and it will not be necessary to delete from these tables, eliminating the errors when deleting after processing. The VEHICLE\_TEMP and AXLE\_TEMP tables will remain in this release and be removed in the next release.

This information is also in the ReadMe.txt instructions. Before this executable is installed, the Database Administrator (DBA) needs to connect as sysdba and execute an Oracle provided script (without errors). This script (catldr.sql) should be located on drive:\oracle\ora90\rdbms\admin\catldr.sql. Refer also to Step 3 of the table titled “Installing Traffic Analysis Software Version 1.3.”

Example: connect [dbusername/dbapassword@trfprod](#) as sysdba

**Distribution of Software**

The software update was distributed directly by the Technical Support Services Contractor (TSSC) via e-mail March 7, 2003. The installation of the analysis software and support table elements to permit processing with the traffic data analysis software shall be completed by March 14, 2003.

**Where to Find Updated Files**

The attached table titled "Installing Traffic Analysis Software Version 1.3," lists the steps for installing the new release of the traffic analysis software. The updated documentation for the traffic analysis software was forwarded by CD-ROM.

**Current Practice**

Since the software has yet to complete a full year's cycle of traffic data processing, the material on the composition of packets to be supplied to the agency remains as guidelines for consideration rather than requirements for execution. Section 3 – Agency Packets in the *Traffic Software Materials Volume 1, User's Manual Version 1.3* dated March 7, 2003 details this process. Additionally, as a number of details remain to be formally implemented with respect to the SPS pooled fund project and associated data processing, Section 4 – SPS Pooled Fund remains under discussion and is not an absolute requirement. Several provisional sections have also been added to the documentation to maintain a central repository of information on the software. No action is required of the Regional Contractors with respect to these new sections.

Prepared by: TSSC

Approved by:

A handwritten signature in black ink, appearing to read "Aramis López, Jr.", written over a horizontal line.

Aramis López, Jr.  
Team Leader, LTPP Operations

**Attachment 1****Installing Traffic Analysis Software Version 1.3**

<b>Step</b>	<b>Action</b>
1	Execute the script to update temp tables to have NOLOGGING  Traffic_Tables_Update_1_3.sql.
2	Execute the script to update codes in the table, TRAFFIC_CODES:  Traffic_Codes_Update_1_3.sql.
3	Execute (without errors) the Oracle provided script “catldr.sql” before installing and using version 1.3  The DBA needs to be connected as SYSDBA in order to do this. One way to connect is by using sqlwork sheet connect <a href="#">dbausername/dbapassword@trfprod</a> . Then execute the script, @drive\oracle\ora90\rdbms\admin\catldr.sql.
4	Replace the analysis.exe on the server  Use the updated analysis.exe located in the zip file Analysis.zip. (Password is “version_1_3”).
5	Run the SQL Admin_table_RS_reset.sql.
6	Run the Admin QC to have Record Status values in: <ul style="list-style-type: none"> <li>◆ SHRP_INFO</li> <li>◆ TRAFFIC_ANALYSIS_TRACKER</li> <li>◆ TRAFFIC_CLASS_CONVERT_MASTER</li> <li>◆ TRAFFIC_CLASS_CONVERT_DATA</li> </ul>
<b>Note:</b> Changes to the software are in the Analysis Software Version 1 3.doc file.	